AMENDMENTS TO THE CLAIMS

Claims 1, 7, 11, 15, 19 and 21 are amended. All pending claims are reproduced below.

1. (Currently Amended) A computer-implemented method for compressing a stream of image or audio data, the data stream received from a data source, the method executed by a processor and comprising:

applying a dynamic prediction function to the stream of image or audio data received from the data source by using dynamically predicted coefficient values associated with the data according to non-linear feedback to yield a first compressed stream of image or audio data;

applying a Golomb coding function to the first compressed stream of data to yield a second compressed stream of image or audio data; and

outputting the second compressed stream of data to a computer-readable storage medium.

2. (Original) The method of claim 1 wherein the data is image data.

3. (Withdrawn) The method of claim 1 wherein the data is audio data.

4. (Original) The method of claim 1 further comprising transforming the data from a first domain to a second domain prior to applying the dynamic prediction function.

5. (Original) The method of claim 4 wherein the first domain is an RGB domain and the second domain is a YUV domain.

6. (Withdrawn) The method of claim 4 wherein the first domain is a left and right channel domain and the second domain is a UV domain.

7. (Currently Amended) The method of claim 1 wherein the first compressed stream of data has a Laplacian distribution.

8. (Currently Amended) A computer program product for compressing a stream of image or audio data, the computer program product stored on a computer-readable medium containing executable instructions configured to cause a computer to perform the steps of:

applying a dynamic prediction function to the stream of image or audio data received from a data source by using dynamically predicted coefficient values associated with the data according to a non-linear feedback to yield a first compressed stream of image or audio data;

applying a Golomb coding function to the first compressed stream of data to yield a second compressed stream of image or audio data; and

outputting the second compressed stream of data to a computer-readable storage medium.

9. (Original) The computer program product of claim 8 wherein the data is image data.

10. (Withdrawn) The computer program product of claim 8 wherein the data is audio data.

11. (Original) The computer program product of claim 8 further comprising instructions configured to cause a computer to transform the data from a first domain to a second domain prior to applying the dynamic prediction function.

12. (Original) The computer program product of claim 11 wherein the first domain is an RGB domain and the second domain is a YUV domain.

13. (Withdrawn) The computer program product of claim 11 wherein the first domain is a left and right channel domain and the second domain is a UV domain.

14. (Previously Presented) The computer program product of claim 8 wherein the first compressed stream of data has a Laplacian distribution.

15. (Currently Amended) A ~~computer~~ system for compressing a stream of image or audio data using a computer, the computer having a processor, the system comprising:

a dynamic predictor module for compressing a stream of image or audio data received from a data source using dynamically predicted coefficient values associated with the data according to a non-linear feedback to produce a first compressed stream of image or audio data having a Laplacian distribution;

an adaptive Golomb engine, communicatively coupled to the dynamic predictor module, adapted to receive the first compressed stream of data and to further compress the first compressed stream of data to form a second compressed stream of image or audio data; and

a stream output device coupled to the adaptive Golomb engine, adapted to output the second compressed stream of data to a computer-readable storage medium.

16. (Original) The system of claim 15 wherein the data is image data.

17. (Withdrawn) The system of claim 15 wherein the data is audio data.

18. (Original) The system of claim 15 further comprising a pre-processing engine for transforming the data from a first domain to a second domain prior to applying the dynamic prediction function.

19. (Currently Amended) The ~~method~~ system of claim [[17]]18 wherein the first domain is an RGB domain and the second domain is a YUV domain.

20. (Withdrawn) The method of claim 17 wherein the first domain is a left and right channel domain and the second domain is a UV domain.

21. (Currently Amended) A data compression system for compressing a stream of image or audio data, the system comprising:

receiving means ~~receiving for~~ for receiving image or audio data to be compressed;

dynamic predicting means, coupled to the receiving means, for applying a dynamic prediction function to the stream of image or audio data by using dynamically

predicted coefficient values associated with the data according to a non-linear feedback to yield a first compressed stream of image or audio data;

Golomb coding means, communicatively coupled to the dynamic predicting means, for applying a Golomb coding function to the first compressed stream of data to yield a second compressed stream of image or audio data; and

outputting means, communicatively coupled to the Golomb coding means, for outputting the second compressed stream of data to a computer-readable storage medium.

22. (Previously Presented) The method of claim 1, wherein the dynamic prediction function yielding the first compressed stream of data is of the form

$$\Delta_n = x_n - \sum_{i=1}^{M} a_{i,n} x_{n-1},$$

where Δ_n is the first compressed stream of data of the data x_n, M is a predetermined order, and $a_{i,n}$ is a dynamically predicted coefficient value associated with the data x_n.

23. (Previously Amended) The method of claim 22, wherein the dynamic prediction function modifying the dynamically predicted coefficient value associated with the data according to a non-linear feedback is of the form

$$a_{i,n+1} += \delta \cdot sign(\Delta_n) \cdot sign(x_{n-i} - x_n),$$

where δ is a positive number, and $sign(z) := 1, 0, -1$ as z is positive, zero, and negative, respectively.

24. (Previously Presented) The method of claim 1, wherein yielding the first compressed stream of data further comprises yielding the first compressed stream of data with improved speed performance according to the formula

$$\Delta_n = x_n - \left(\left(\sum_{i=1}^{M} a_{i,n} x_{n-1} \right) >> s \right),$$

where >> is a shift-rational arithmetic function and s is an integer.

25. (Previously Presented) The computer program product of claim 8, wherein the dynamic prediction function to yield the first compressed stream of data is of the form

$$\Delta_n = x_n - \sum_{i=1}^{M} a_{i,n} x_{n-1},$$

where Δ_n is the first compressed stream of data of the data x_n, M is a predetermined order, and $a_{i,n}$ is a dynamically predicted coefficient value associated with the data x_n.

26. (Previously Presented) The computer program product of claim 25, wherein the instructions for applying a dynamic prediction function configured to modify the dynamically predicted coefficient value associated with the data according to a non-linear feedback of the form

$$a_{i,n+1} += \delta \cdot sign(\Delta_n) \cdot sign(x_{n-i} - x_n),$$

where δ is a positive number, and $sign(z) := 1, 0, -1$ as z is positive, zero, and negative, respectively.

27. (Previously Presented) The computer program product of claim 8, wherein the instructions for applying a dynamic prediction function further configured to yield the first compressed stream of data with improved speed performance according to the formula

$$\Delta_n = x_n - \left(\left(\sum_{i=1}^{M} a_{i,n} x_{n-1} \right) >> s \right),$$

where >> is a shift-rational arithmetic function and s is an integer.

28. (Previously Presented) The system of claim 15, wherein the dynamic predictor yields the first compressed stream of data according to the formula

$$\Delta_n = x_n - \sum_{i=1}^{M} a_{i,n} x_{n-1},$$

where Δ_n is the first compressed stream of data of the data x_n, M is a predetermined order, and $a_{i,n}$ is a dynamically predicted coefficient value associated with the data x_n.

29. (Previously Presented) The system of claim 28, wherein the dynamic predictor modifies the dynamically predicted coefficient value associated with the data according to a non-linear feedback of the form

$$a_{i,n+1} += \delta \cdot sign(\Delta_n) \cdot sign(x_{n-i} - x_n),$$

where δ is a positive number, and $sign(z) := 1, 0, -1$ as z is positive, zero, and negative, respectively.

30. (Previously Presented) The system of claim 15, wherein the dynamic predictor yields the first compressed stream of data with improved speed performance according to the formula

$$\Delta_n = x_n - \left(\left(\sum_{i=1}^{M} a_{i,n} x_{n-1} \right) >> s \right),$$

where >> is a shift-rational arithmetic function and s is an integer.